

**REMARKS**

The Examiner rejected claims 1-5, 7-9, 12-15, and 18-20 under 35 U.S.C. §103(a) as being unpatentable over Paldus et al. (U.S. Patent 6, 466, 322, hereinafter “Paldus”) in view of Hill (U.S. Patent 6, 512, 588). Claims 6, 10, 11 and 16 were objected to as being dependent upon a rejected base claim. The Examiner stated that claims 6, 10, 11 and 16 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants have not amended the claims and respectfully request reconsideration of the Examiner’s rejection under 35 U.S.C. §103(a).

**Obviousness under 35 U.S.C. §103(a)-Paldus in view of Hill:**

A *prima facie* case of obviousness requires that the combined prior art references teach or suggest all the claim limitations of applicants’ claims. (See MPEP 706.02 (j)). Independent claims 1 and 12 include limitations that are not taught or suggested by the combined prior art references.

In rejecting claims 1 and 12, the Examiner stated that Paldus teaches a *single frequency light source* and a *frequency shifter* that shifts a mean frequency of a first component with respect to a mean frequency of a second component (emphasis added). Applicants’ independent claim 1 recites “...a tunable optical source generating a first lightwave ... and a second lightwave having ... a delay relative to the first lightwave, the delay inducing a frequency offset between the first lightwave and the second lightwave as the tunable optical source is tuned over a designated wavelength range...”

Applicants’ claim 1 includes a tunable optical source generating a first lightwave ... and a second lightwave having ... a delay relative to the first lightwave. Paldus does not teach or suggest a tunable light source generating a first lightwave and

second lightwave that has *a delay* relative to the first lightwave. In contrast to Applicants' claim 1, Paldus discloses "a CW light source that produces light having components with different polarizations". (Paldus abstract). Paldus does not teach or suggest a relative delay between the components with the different polarizations.

Applicants' claim 1 further recites that "the *delay induces a frequency offset* between the first lightwave and the second lightwave ..." (emphasis added). In contrast to Applicants' claim 1, Paldus discloses *a frequency shifter* that shifts a mean frequency of a first component with respect to a mean frequency of a second component . Paldus does not teach or suggest a delay inducing a frequency offset as recited in Applicants' claim.

Paldus also teaches that the frequency shifter shifts frequency of light provided by a CW light source. This teaches away from a delay inducing a frequency offset as a tunable optical source is tuned over a wavelength range, even if Paldus teaches that the CW light source can be tuned, as stated by the Examiner.

The Examiner has not stated that the cited art teaches or suggests at least the above three limitations of Applicants claim 1, and in fact, these limitations are not taught or suggested in the cited prior art. Accordingly, a *prima facie* case of obviousness has not been made, and Applicants' claims cannot be obvious on these grounds. Similar reasoning applies to Applicants' independent claim 12.

**CONCLUSION**

Because the limitations of Applicants' independent claims 1 and 12 are not taught or suggested in the prior art, Applicants believe that originally presented claims 1 and 12 are not obvious in view of the cited references. Based on the believed patentability of Applicants' independent claims, the claims dependent on claims 1 and 12 are also believed patentable.

If the Examiner has any questions or would like to discuss this application in more detail, he is invited to call Applicants' attorney at the telephone number given below.

Respectfully submitted,

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